

LESLIE MAVRAKIS

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EDUCATION

University of California Santa Barbara 2019-present

PhD Candidate, Department of Mathematics, as of Spring 2022

- Mathematics Department Block Grant Fellowship Spring 2022

University of California Santa Barbara 2019-2021

Master of Arts in Mathematics

Seattle Pacific University (2015-2019) Overall GPA: 3.93

Bachelor of Science in Mathematics, Minor in Computer Science

- Alpha Kappa Sigma Award 2019
- President's Citation Award Finalist
- Trustees Scholar Award 2015-2019
- H. Arthur and Gloria E. Langer Physics and Mathematics Scholarship Endowment 2018-2019
- Deans List 2015-2019

TECHNICAL STRENGTHS

Computer Languages	C, C++
Software & Tools	LaTeX, Excel, Maple, R Studio, Visual Studio

RESEARCH EXPERIENCE

NSF REU at Texas A&M University May - July 2018

Undergraduate Research

- Studied and researched topological quantum computation with two other undergraduate researchers and a professor for eight weeks.
- Proved integral metaplectic modular categories are group theoretical and studied the implications of this result.
- Prepared biweekly presentations on the status of research. Delivered presentations to twenty other student researchers and professors.
- Worked with student research team to write up results in a final paper to submit for publication.

NSF ESP REU at St. Mary's College of Maryland June - July 2016

Undergraduate Research

- Learned and researched knot theory with a team of three other undergraduate researchers and a professor for seven weeks.
- Created a version of the Jones Polynomial which remains unaffected by a change in orientation when studying links. Studied the properties of this polynomial in comparison to the Jones Polynomial.
- Prepared and delivered weekly presentations on current research results with student research team.
- Collaborated with peer researchers to write up results in a final paper and submitted paper for publication.

MATHEMATICAL PAPERS

Unoriented Links and the Jones Polynomial (with S. Ganzell, J. Huffman, K. Tademy, G. Walker). *Involve, a Journal of Mathematics*, 12(8), 1357-1367.

Integral Metaplectic Modular Categories (with A. Deaton, P. Gustafson, S. Poltoratski, E. Rowell, S. Timmerman, B. Warren, Q. Zhang). *Journal of Knot Theory and Its Ramifications* 29, no. 05 (2020): 2050032.

PRESENTATIONS

2016-07-30. Knot Theory: A Polynomial for Unoriented Links. St. Marys College of Maryland.

2017-04-28. Knot Theory: A Polynomial for Unoriented Links. Erickson Conference. Seattle Pacific University. *Winner of Best Poster Presentation Award*.

2017-06-10. Knot Theory: A Polynomial for Unoriented Links. PNW MAA. Gonzaga University. *Winner of Best Undergraduate Talk Award*.

2017-10-14. Knot Theory: A Polynomial for Unoriented Links. NUMS. Western Washington University.

2018-07-16. Integer Metaplectic Modular Categories. Texas A&M University.

2019-05-10. Knot Theory and the 2-Variable Kauffman Polynomial. Erickson Conference. Seattle Pacific University. *Winner of Best Oral Presentation Award*.

2019-05-10. The Aftermath: Optimizing Medical Resource Allocation via Quadcopter Post-Disaster. Erickson Conference. Seattle Pacific University. *Winner of Best Poster Presentation Award*.

2021-11-08. A Universal Branched Manifold in Dimension 2 and 3. Graduate Topology Seminar. University of California Santa Barbara.

2022-04-26. A Universal Branched Manifold for Spherical Geometry. Advancement to Candidacy Talk. University of California Santa Barbara.

PROFESSIONAL EXPERIENCE

Teaching Assistant

Fall 2019 - present

University of California Math Department

- Assigned a undergraduate math class each quarter to teach various breakout sessions to once a week.
- Designs worksheets, lesson plans, and supplementary material to help students grasp concepts.
- Holds office hours and works in the math tutoring center each week as well as grades all exams for the following courses:

Math 2B: Integral Calculus with Algebra and Trigonometry (Winter 2020)

Math 3A: Differential Calculus (Fall 2019)

Math 34B: Integral Calculus for the Social and Life Sciences (Spring 2020, online)

Math 4B: Differential Equations (Spring 2021 online, head TA)

Math 8: Transition to Higher Mathematics (Summer 2020 online; Fall 2020 online; Winter 2021 online; Summer 2021 online; Fall 2021; Winter 2022)

SIMS Teaching Instructor

Summer 2021, online

University of California Summer Institute in Mathematics and Science

- Taught a three week course in Integral Calculus to incoming UCSB first years
- Recorded asynchronous lectures, planned synchronous problem solving activities, assigned daily homework, and created and graded weekly quizzes.

Math Grader

Spring 2016-March 2019

Seattle Pacific University Math Department

- Grades math homework for a variety of different college math courses.
- Communicates with professors and fulfills quick deadlines.

Math Tutor

Fall 2016-March 2019

Seattle Pacific University Center for Learning

- Helps university students with math courses ranging from introductory classes through Calculus III.
- Patiently assists students with concepts, studying, and homework.
- Communicates with other tutors to make sure students questions are answered in the best possible way.

Mathematical Contest in Modeling 2019

January 2019

- Participated in an international five day math modeling competition with a team of two other students.
- Developed and modelled a post-disaster drone medical system for Puerto Rico based on the damage done by the 2017 hurricane.
- Modeled bin packing configurations with different medical kits, determined a drone fleet, and created flight paths for each drone to deliver specific medical supplies and gather video footage.
- Received a Finalist score (ranked in the top 13 papers out of over 5,000).

Mathematical Contest in Modeling 2017

January 2017

- Proposed several improvements to help speed up airport security and created a mathematical model to support these changes.
- Worked with teammates to write a twenty page paper fully explaining our model.
- Received score of Honorable Mention.

MEMBERSHIPS

Association for Women in Mathematics, since September 2019.

Mathematical Association of America, since August 2018.